

APPENDIX H

Biological Assessment and Biological Opinion

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Biological Assessment

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PART 1

INTRODUCTION

1.1 PROPOSED PROJECT DESCRIPTION

The current Dakota, Minnesota & Eastern Railroad Corporation (DM&E) system includes approximately 700 miles of east-west mainline track across southern and central South Dakota and southern Minnesota, extending westward from the Mississippi River at Winona, Minnesota, through Rochester, Owatonna, Waseca, and Mankato and into South Dakota. The mainline passes through Brookings, Huron, Pierre, and Rapid City, South Dakota before turning northwest through Sturgis and Belle Fourche, Minnesota and South Dakota on to Colony, Wyoming. The system also consists of several hundred miles of secondary track extending off the mainline into northwestern Nebraska, northern Iowa, and other portions of South Dakota and (Figure 1-1). DM&E currently operates four to eight trains per day over various sections of its system, transporting a wide variety of commodities including grain and other agricultural products, bentonite and kaolin clays, cement, and wood products.

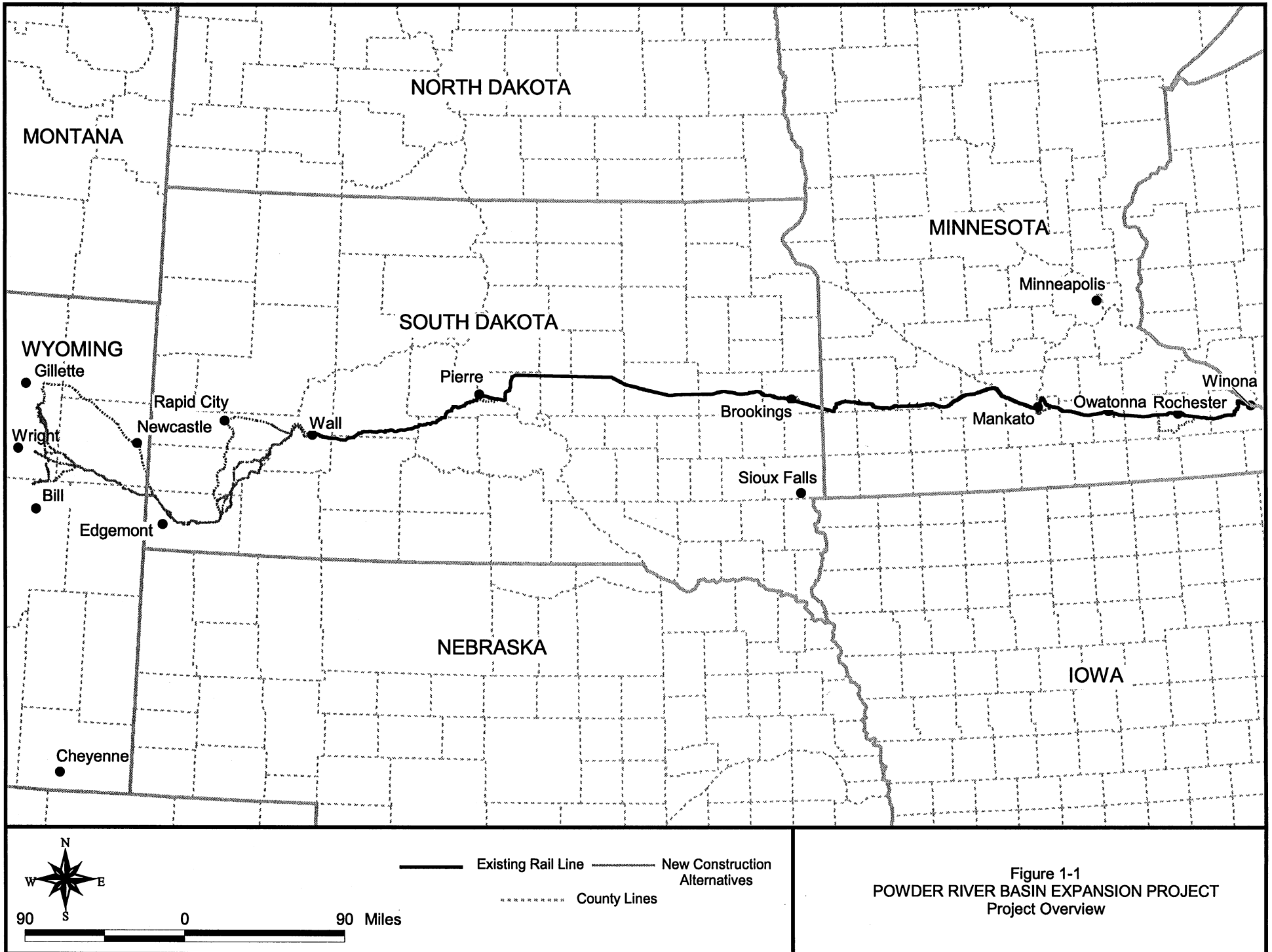
DM&E is seeking authority to construct and operate new rail line facilities in south-central Minnesota, southwest South Dakota and east-central Wyoming. This construction and operation would extend DM&E's existing system westward into the Powder River Basin region of Wyoming, allowing DM&E to connect to coal producing mines. Construction and operation of this project would provide an additional rail carrier access to the region and facilitate transport of coal eastward from the mines over DM&E's existing system.

The Powder River Basin Expansion Project (PRB Expansion Project) involves approximately 300 miles of new rail line construction. Additionally, as part of the proposed project, DM&E would rebuild approximately 600 miles of its existing rail line along its current system to standards acceptable for operation of unit coal trains.

New rail construction would include approximately 300 miles of rail line extending off DM&E's existing system near Wall, South Dakota, extending generally southwesterly to Edgemont, South Dakota, and then westerly into Wyoming to connect with existing coal mines located south of Gillette, Wyoming. New rail construction would also include approximately 14 miles or less of rail line at Mankato, Minnesota, within Blue Earth County. DM&E currently has trackage on both sides of Mankato, accessed by trackage rights on rail line operated by Union Pacific Railroad Company (UP). The proposed Mankato construction would provide DM&E direct access between its existing lines and avoid operational conflicts with UP.

The final proposed segment of new rail construction would involve a connection between the existing rail systems of DM&E and I&M Rail Link (I&M). The connection would include construction and operation of approximately three miles or less of new rail line near Owatonna, Minnesota, within Steele County. The connection would allow interchange of rail traffic between the two carriers.

In order to transport coal over the existing system, DM&E proposes to rebuild approximately 600 miles of its existing rail line. The majority of this, approximately 580 miles, would be along DM&E's mainline between Wall, South Dakota, and Winona, Minnesota. Approximately 5 miles of existing rail line near Smithwick, South Dakota, would also be rebuilt. Rail line rebuilding would include rail, tie, and ballast replacement, additional sidings, signals, grade crossing improvements, and other systems.



1.2 MINNESOTA AND SOUTH DAKOTA REBUILD

1.2.1 Minnesota

DM&E's existing line crosses the counties of Winona, Olmsted, Dodge, Steele, Waseca, Blue Earth, Brown, Redwood, Lyon, and Lincoln. DM&E's existing line originates at Winona, Minnesota and closely parallels U.S. Highway 14 west across much of the state (Fig. 1-2).

1.2.2 South Dakota

The rebuild of the existing DM&E rail line continues in eastern Brookings County, southeast of Elkton at the South Dakota/Minnesota state line (Fig. 1-3). The proposed project area is located primarily in rural areas in the following counties: Brookings, Kingsbury, Beadle, Hand, Hyde, Hughes, Stanley, Jones, Haakon, Jackson, and Pennington. The line closely parallels U.S. Highway 14 west across South Dakota. The rebuild portion of the project terminates at Wall, South Dakota (Pennington County).

1.3 MINNESOTA NEW CONSTRUCTION

1.3.1 Mankato

1.3.1.1 M-1 (No Action)

The no-action alternative, M-1, is project denial.

1.3.1.2 M-2 (Proposed Action or Southern Alternative)

This alternative involves construction of a new rail line in a loop south of Mankato to connect DM&E trackage on the west and east sides of the city (Fig. 1-4). The new rail line would extend from DM&E's existing line approximately 1.25 miles east of Eagle Lake. This alternative would join with the existing DM&E rail line approximately 0.6 miles west of where the existing DM&E and UP rail lines merge. M-2 would result in approximately 13.3 miles of new construction and would require construction of bridges across the Blue Earth River.

1.3.1.3 M-3 (Existing Corridor or Middle Alternative)

This alternative would bypass the UP track through Mankato by using the existing DM&E rail line to the point where it merges with the UP rail line and then constructing new rail line within the existing UP rail corridor. It would connect to the existing DM&E rail line where it currently merges with the UP rail line on the east side of Mankato. This alternative would require construction of bridges across the Blue Earth River, the rebuilding of approximately 10.1 miles of existing DM&E track and approximately 5.5 miles of new construction adjacent to the UP rail line (Fig. 1-4).

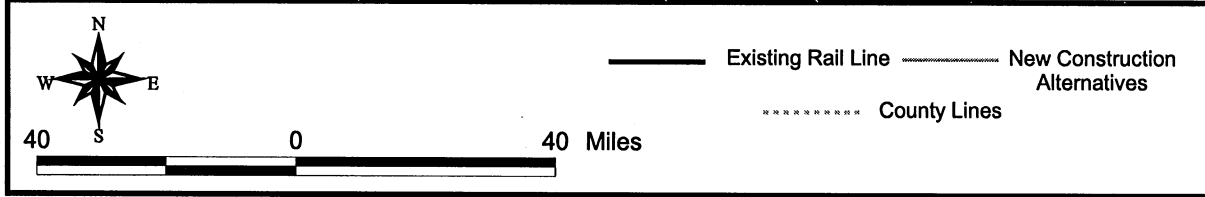
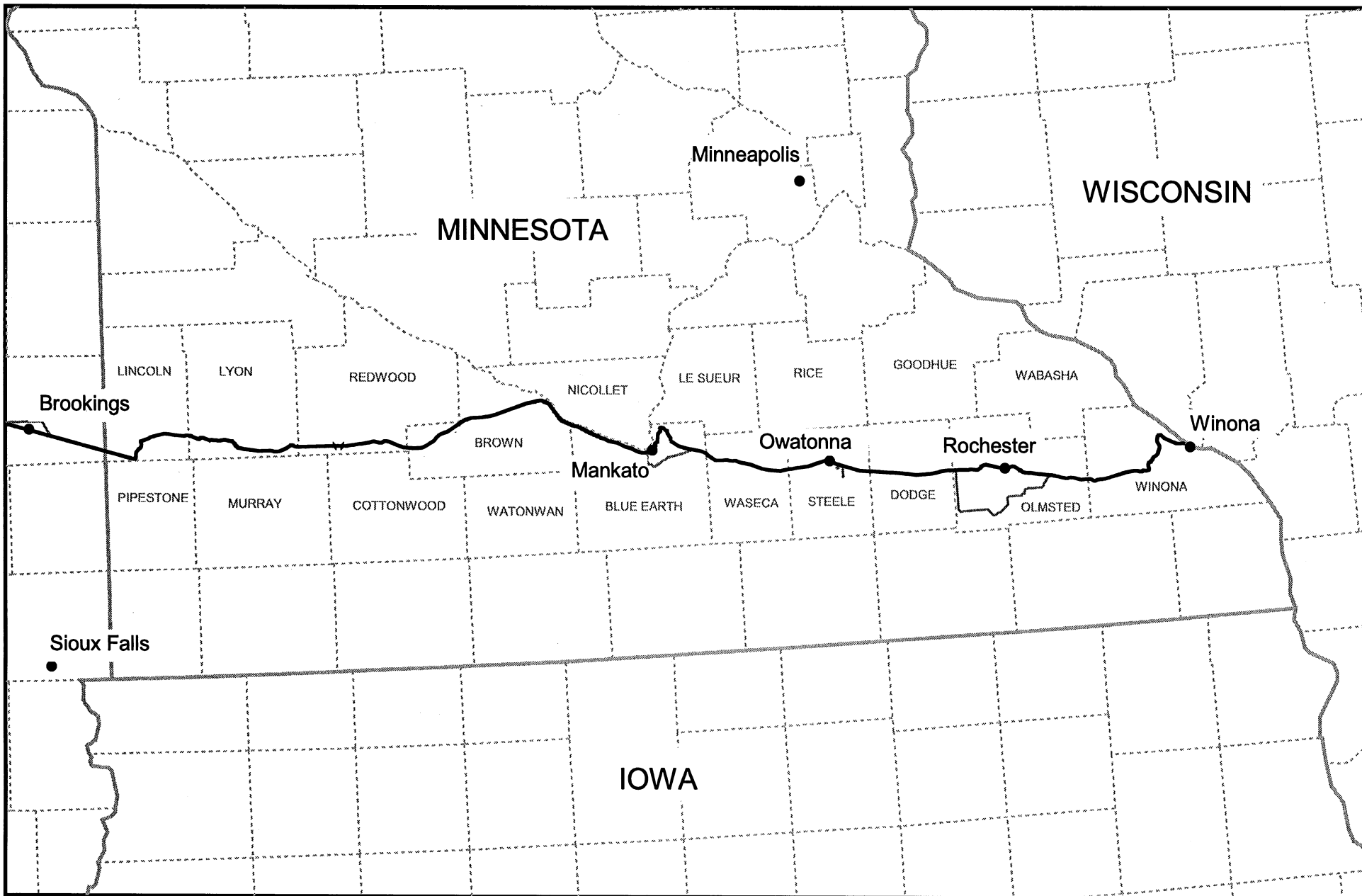
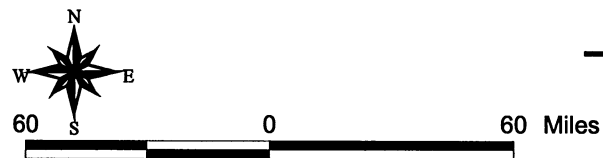
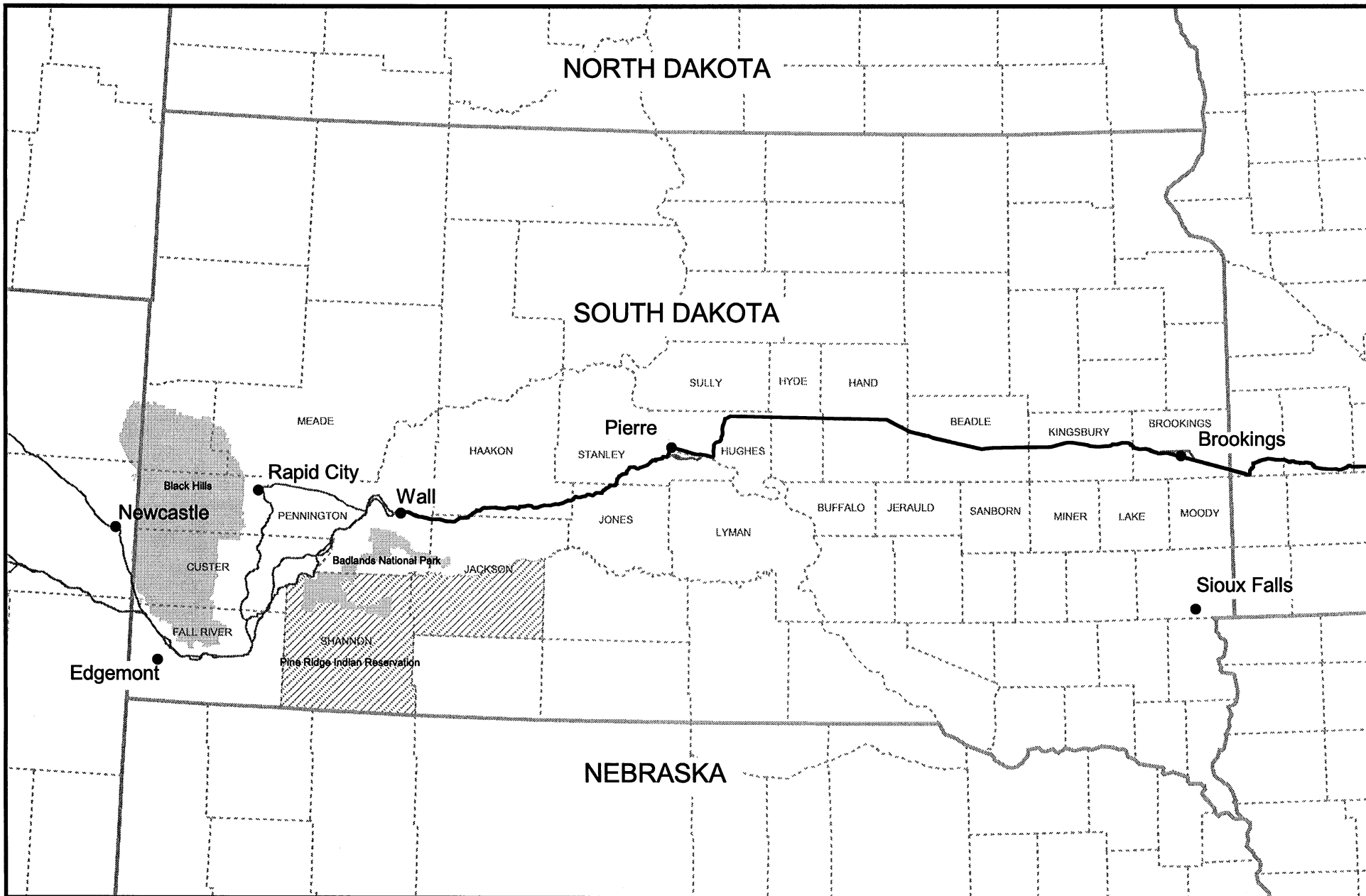


Figure 1-2
POWDER RIVER BASIN EXPANSION PROJECT
Minnesota Overview



Existing Rail Line New Construction Alternatives
County Lines

Figure 1-3
POWDER RIVER BASIN EXPANSION PROJECT
South Dakota Overview

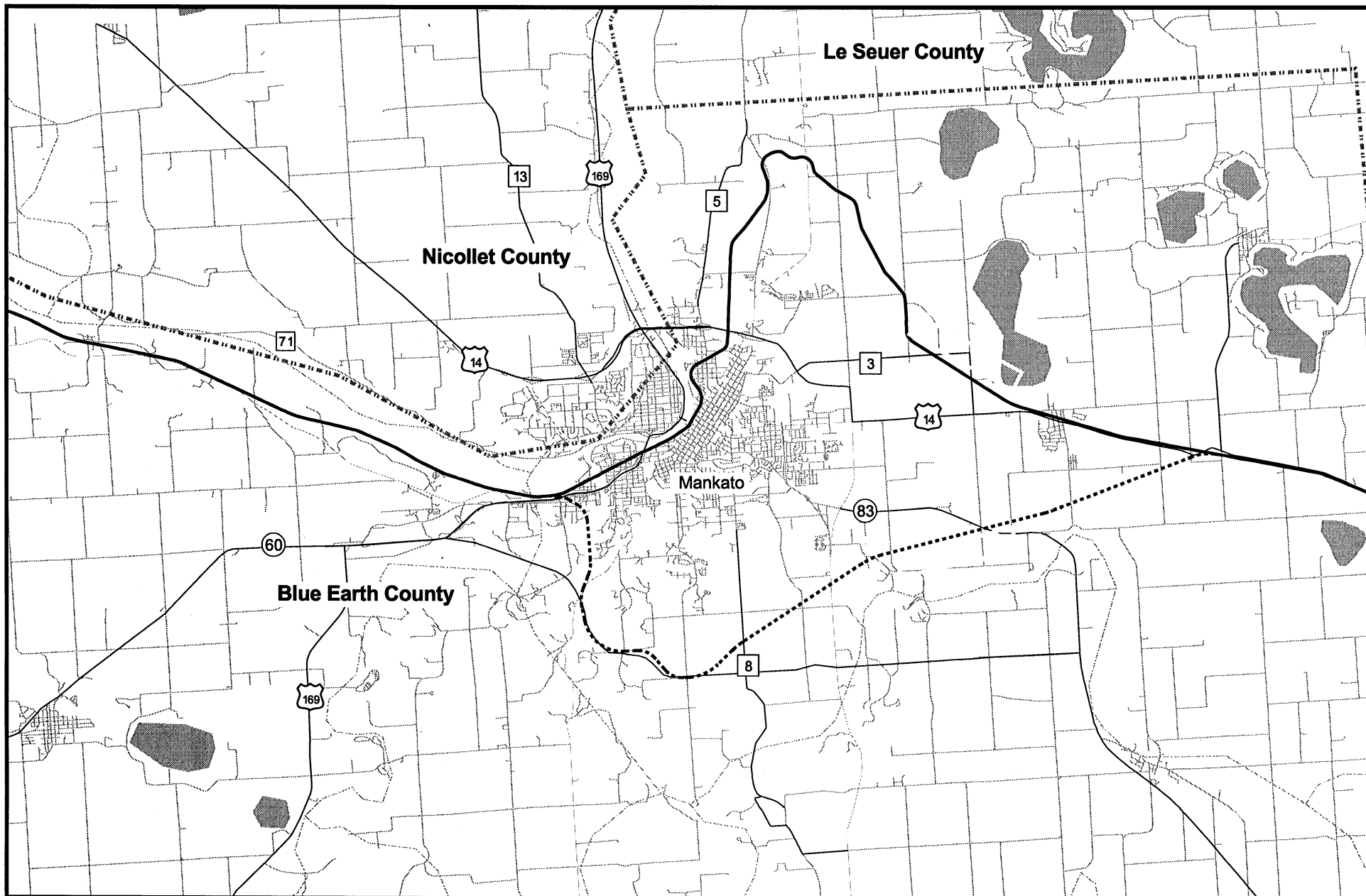


Figure 1-4
POWDER RIVER BASIN EXPANSION PROJECT
Mankato Alternatives
Mankato, Minnesota

1.3.2 Owatonna

1.3.2.1 O-1 (No Action)

The no-action alternative, O-1, would include overall project approval, but denial of authority to construct and operate a connecting track to the I&M. No permits would be issued for the necessary construction. DM&E and I&M would continue to be unable to interchange traffic at Owatonna, although their lines are in close proximity. They would only be able to interchange traffic at Winona, via trackage rights over Canadian Pacific Railway Company (CP), which provides a less efficient routing of traffic to various markets in central Minnesota, Iowa, and Missouri. The O-1 Alternative would not allow either

DM&E or I&M to explore potential opportunities to acquire additional rail traffic due to having a more efficient rail route for specific shippers, nor would the potential corresponding savings in fuel be recognized.

1.3.2.2 O-2 (Proposed Action)

Alternative O-2 would include construction and operation of approximately 2.94 mile connecting track, to allow interchange of rail traffic with I&M. This connection would provide a north-south connection, with access to Chicago and the Twin Cities, as well as to various Mississippi River ports. The connection would form a “Y” to allow rail traffic movements both northbound through Owatonna, or southbound on the I&M (Fig. 1-5).

1.3.2.3 O-3 (Alternative Alignment)

A second alternative for connection to the I&M rail line, Alternative O-3, would include approximately 1.25 miles of new rail line construction. Alternative O-3 would begin at a point southeast of Owatonna, approximately 1.0 mile from Owatonna in the northeast. The alternative would split to form a “Y” and each spur would connect to I&M, creating north- and southbound connections (Fig. 1-5).

1.3.3 Bypasses

1.3.3.1 Owatonna Bypass

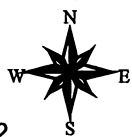
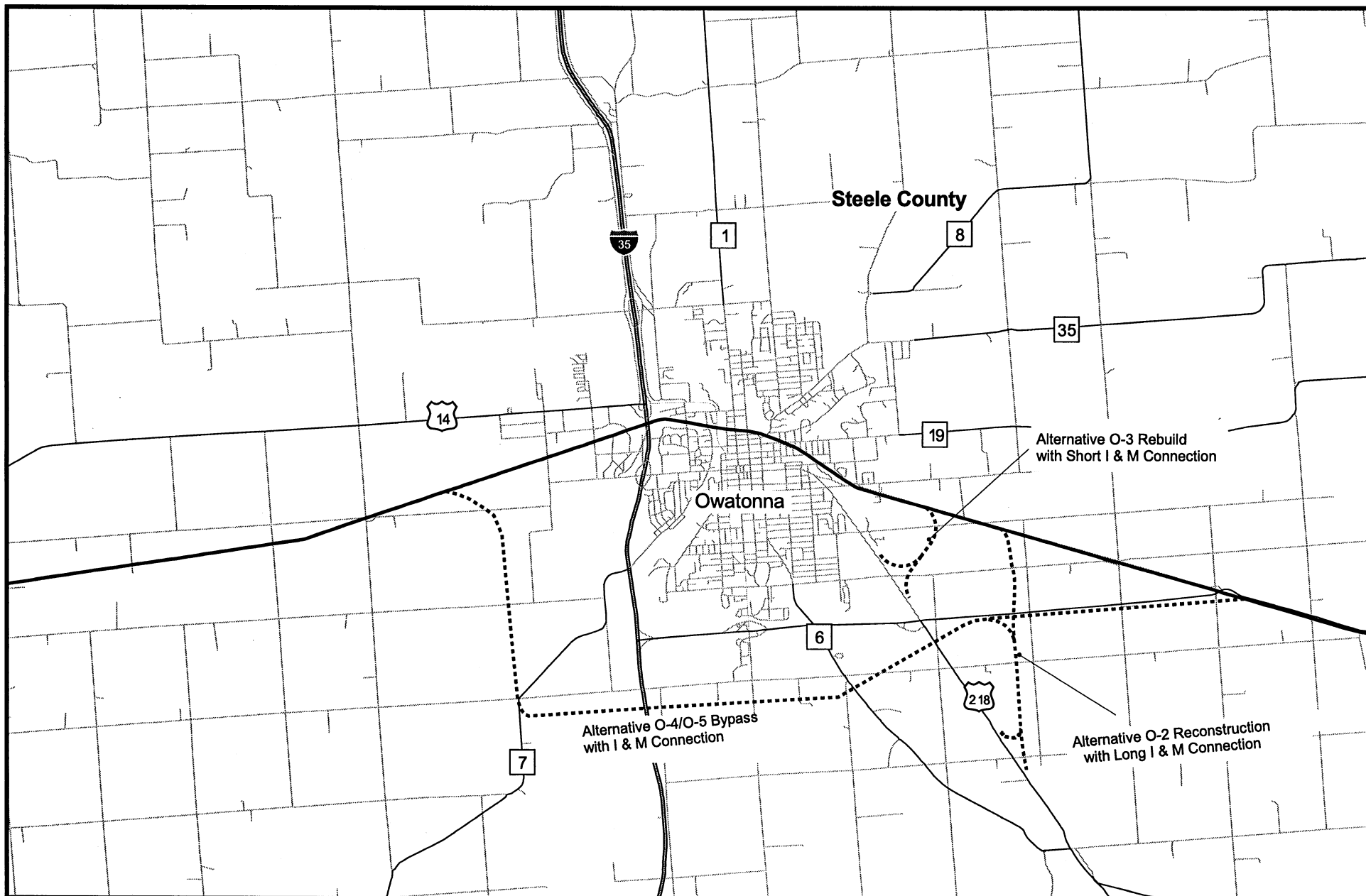
The Owatonna Bypass would include approximately 13 miles of new rail line. It would begin approximately 1.4 miles southeast of Havana, Minnesota on the existing DM&E line. It would extend westward from the existing DM&E rail line. The bypass would turn north connecting to the existing DM&E rail line. It would include connections to I&M to allow north- and southbound rail interchange (Fig. 1-5).

1.3.3.2 Rochester Bypass

The Rochester bypass would be approximately 34.1 miles in length. It would extend south from the existing DM&E rail line in Dodge County, Minnesota approximately 0.8 miles west of the Olmsted County line. The route would curve south, entering Olmsted County approximately 250 feet south of the existing rail line. Eventually the line would head north and join the existing DM&E rail line approximately 2,000 feet west of Eyota (Fig. 1-6).

1.3.3.3 Brookings Bypass

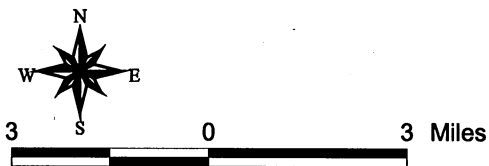
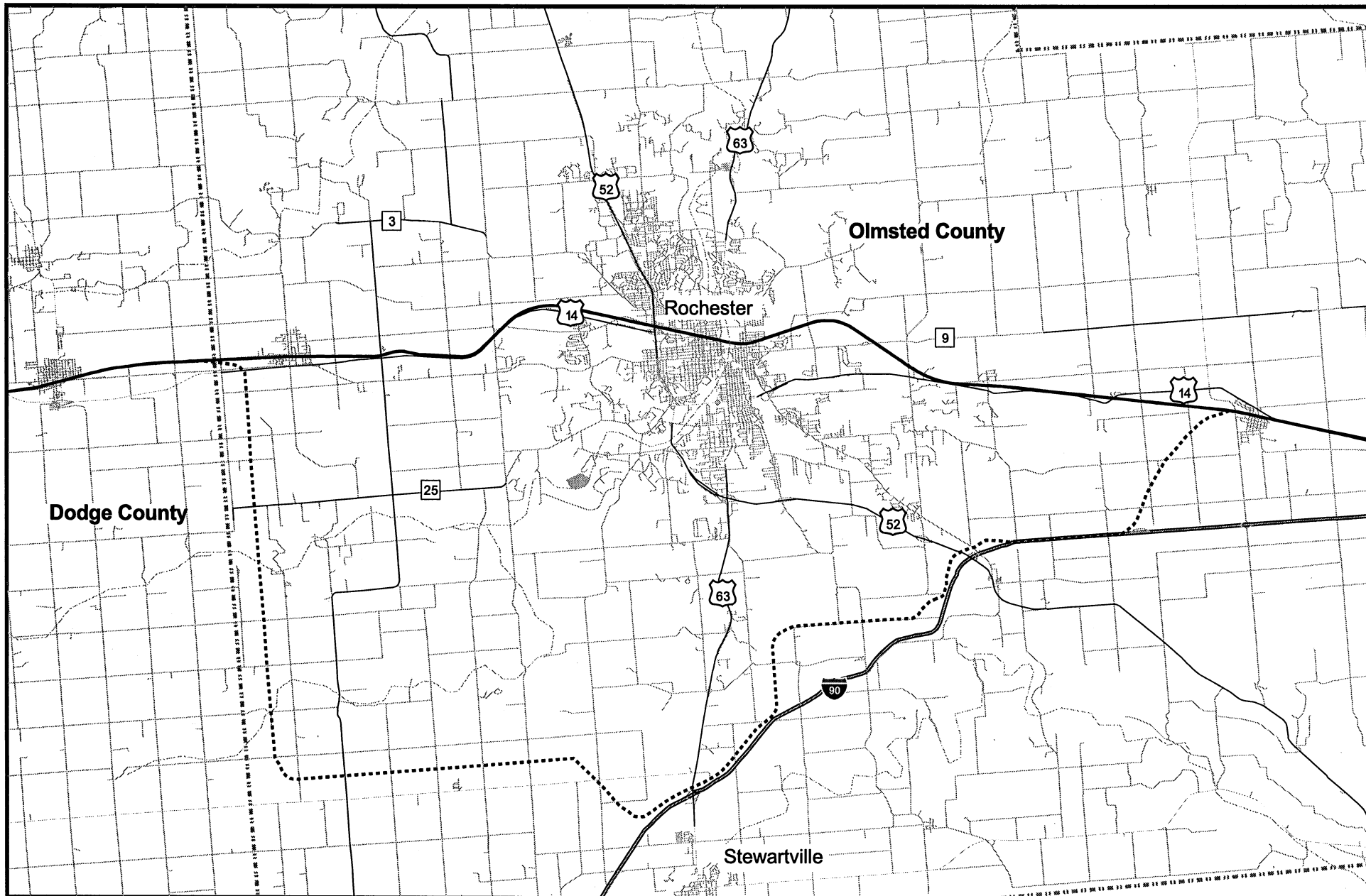
The bypass would extend the existing DM&E line 1.5 miles west of the town of Volga. The total length of the Brookings bypass is approximately 15.2 miles. The bypass would head west around the north side of Brookings eventually joining the existing DM&E rail line approximately 0.5 mile west of Aurora (Fig. 1-7).



2 0 2 Miles

Existing Rail Line Roads
New Construction

Figure 1-5
POWDER RIVER BASIN EXPANSION PROJECT
Owatonna Alternatives
Owatonna, Minnesota



—————	Existing Rail Line	—————	Roads
.....	New Construction	—————	County Line
		—————	Streams

Figure 1-6
POWDER RIVER BASIN EXPANSION PROJECT
Rochester Bypass Alternative Route
Rochester, Minnesota

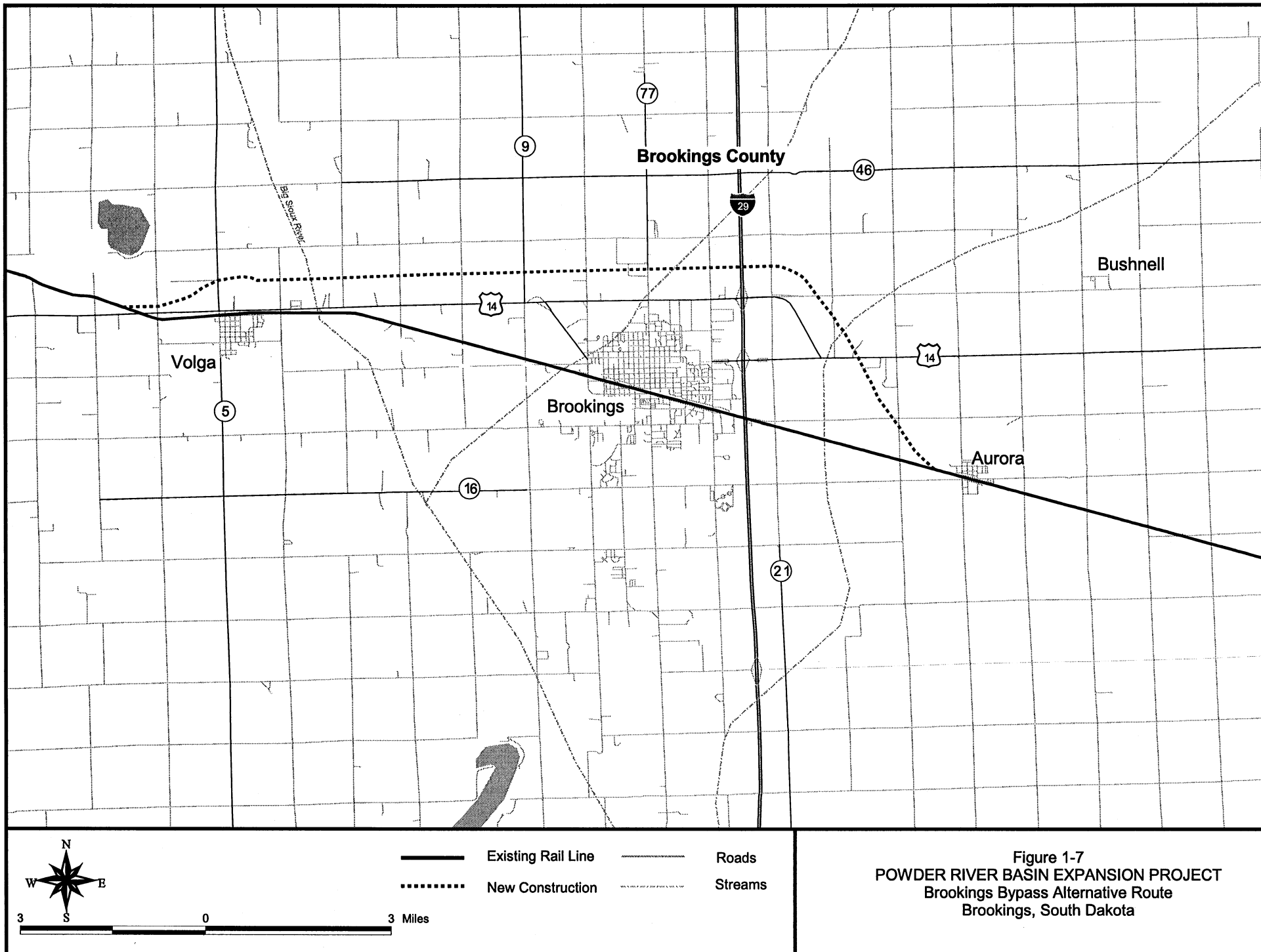


Figure 1-7
POWDER RIVER BASIN EXPANSION PROJECT
Brookings Bypass Alternative Route
Brookings, South Dakota

1.3.4 Staging Yards

1.3.4.1 Middle East Staging and Marshaling Yard (Mankato)

The location of this yard is between MP 146.9 and MP 149.4. The dimensions of the yard are 400 feet by 2.5 miles. This yard would serve as a staging yard for loaded and empty coal trains and would support the interchange with UP at Mankato. This yard would be designed to accommodate a small amount of maintenance-of-way equipment. It would also serve as a crew change point. Approximately 250 to 300 jobs would be located here at full operations (DM&E 1999).

1.3.4.2 Waseca Marshaling Yard

This yard is planned to serve as a marshaling yard for traffic to and from the surrounding communities. Way freights would be based here and non-coal trains would stop to set out and/or pickup cars. This yard may contain a very small mechanical facility designed to accomplish emergency repairs on cars and locomotives and also the refueling of some locomotives. It would also accommodate a small amount of maintenance-of-way equipment. It is likely that 75 to 100 jobs would be based here at full operations (DM&E 1999).

1.3.4.3 East Staging and Marshaling Yard

This yard is planned to serve as a staging yard for loaded and empty coal trains moving to and from Minnesota City, Minnesota. It would also serve as a marshaling yard and support the interchange of traffic with UP and CP at Minnesota City. Helper locomotives to provide additional braking capability for trains moving down Lewiston Hill would be based here. This yard would contain a very small mechanical facility designed to accomplish emergency repairs to cars and locomotives and also the refueling of some locomotives. This yard would be designed to accommodate a limited amount of maintenance-of-way equipment. It would have a small office from which supervisors would oversee local operations. This would also be a crew base location for all train crews starting and finishing work between Utica and Winona. It is likely that 40 to 50 jobs would be based here at full operation (DM&E 1999).

1.4 SOUTH DAKOTA AND WYOMING NEW CONSTRUCTION

Extending the existing DM&E system to access Powder River Basin (PRB) coal mines would require construction of approximately 300 miles of new rail line along new rail right-of-way (ROW).

1.4.1 Alternative A (No Action)

The No-Action Alternative, Alternative A, would include no new construction of rail line or reconstruction of existing DM&E line in Minnesota, South Dakota, and Wyoming. The application before the Board for authority to construct, maintain, rebuild and operate the DM&E Railroad would not be approved. The Special Use Application submitted by DM&E for an easement under the Federal Land Management Policy Act of 19 (FLPMA) to cross portions of the BGNG in South Dakota and TBNG in Wyoming would not be granted by the U.S. Forest Service (USFS). The application for a right-of-way crossing portions of land administered by the U.S. Department of the Interior, Bureau of Land Management (BLM) in sections of South Dakota and Wyoming would not be granted. The U.S. Army Corps of Engineers would not issue a permit for impacting waters of the United States or wetlands. The U.S. Coast Guard (USCG) would not issue a permit for construction of rail bridge facilities over the Missouri River. The U.S. Department of the Interior, Bureau of Reclamation (Bureau) would not issue a permit for project impacts to lands and facilities that are part of the Angostura Reservoir and Irrigation Project. No state or local permits would be issued. Coal would continue to be mined in the PRB and transported by UP and BNSF. Coal mines would continue to open and increase production, potentially increasing rail service problems both in the PRB at the mines and for the customers. As coal production increased, rail traffic would also increase. Upgrades to the existing joint line would be likely. Communities the existing coal traffic currently is

transported through would likely experience increases in rail traffic and associated impacts related to noise, traffic delay, safety, and air emissions.

1.4.2 Alternative B (Proposed Action)

Alternative B would extend from the existing DM&E system north of Wall (Pennington County) and continue generally southwest along the Cheyenne River Valley. It would generally northwestward across Niobrara and Weston counties, splitting into a "Y" configuration to serve the mines in Converse and Campbell counties (Fig. 1-8).

1.4.3 Alternative C (Modified Proposed Action)

Alternative C, the Modified Proposed Action, was developed by realigning Alternative B to avoid environmentally sensitive areas. This alignment avoids RARE-2 areas and reduces impacts to the Cheyenne River Valley. However, for engineering reasons, in many areas it follows much the same alignment as Alternative B. This alignment uses DM&E's existing track westward to Wall, South Dakota. New construction would extend from the existing DM&E system north of Wall (Pennington County) and continue southwest (Fig. 1-8). This alignment avoids RARE-2 areas and reduces impacts to the Cheyenne River Valley. It would continue west toward the coal mines where it would split into a "T" configuration to service the mines south of Gillette, Wyoming. Chapter 2 of the DEIS provides a detailed description of this alternative.

1.4.4 Alternative C with the Phiney Flat Variation

This route modification of Alternative C was proposed to avoid environmentally sensitive areas associated with Spring Creek, a tributary to the Cheyenne River (Custer and Pennington counties) (Fig. 1-8). Chapter 2 of the DEIS provides a detailed description of this alternative.

1.4.5 Alternative C with the W G Flat Variation

This route modification of Alternative C was proposed to avoid environmentally sensitive areas associated with Hay Canyon, a tributary to the Cheyenne River (Fig. 1-8). Chapter 2 of the DEIS provides a detailed description of this alternative.

1.4.6 Alternative D (Existing Corridor Alternative)

This alternative uses existing track westward to Wall, South Dakota. The rail line would head southwest to Edgemont. From Edgemont the line would continue northward paralleling the existing BNSF right-of-way northwest to Donkey Creek Junction. At Donkey Creek Junction the line would follow the Joint Line south to access the mines. This alternative involve would utilization and rebuilding of existing DM&E rail line and new construction between Smithwick and Donkey Creek Junction and immediately adjacent to the existing Joint Line. Chapter 2 of the DEIS provides a detailed description of this alternative (Fig. 1-8).

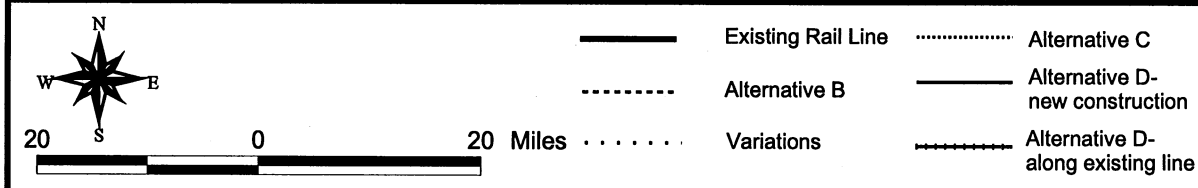
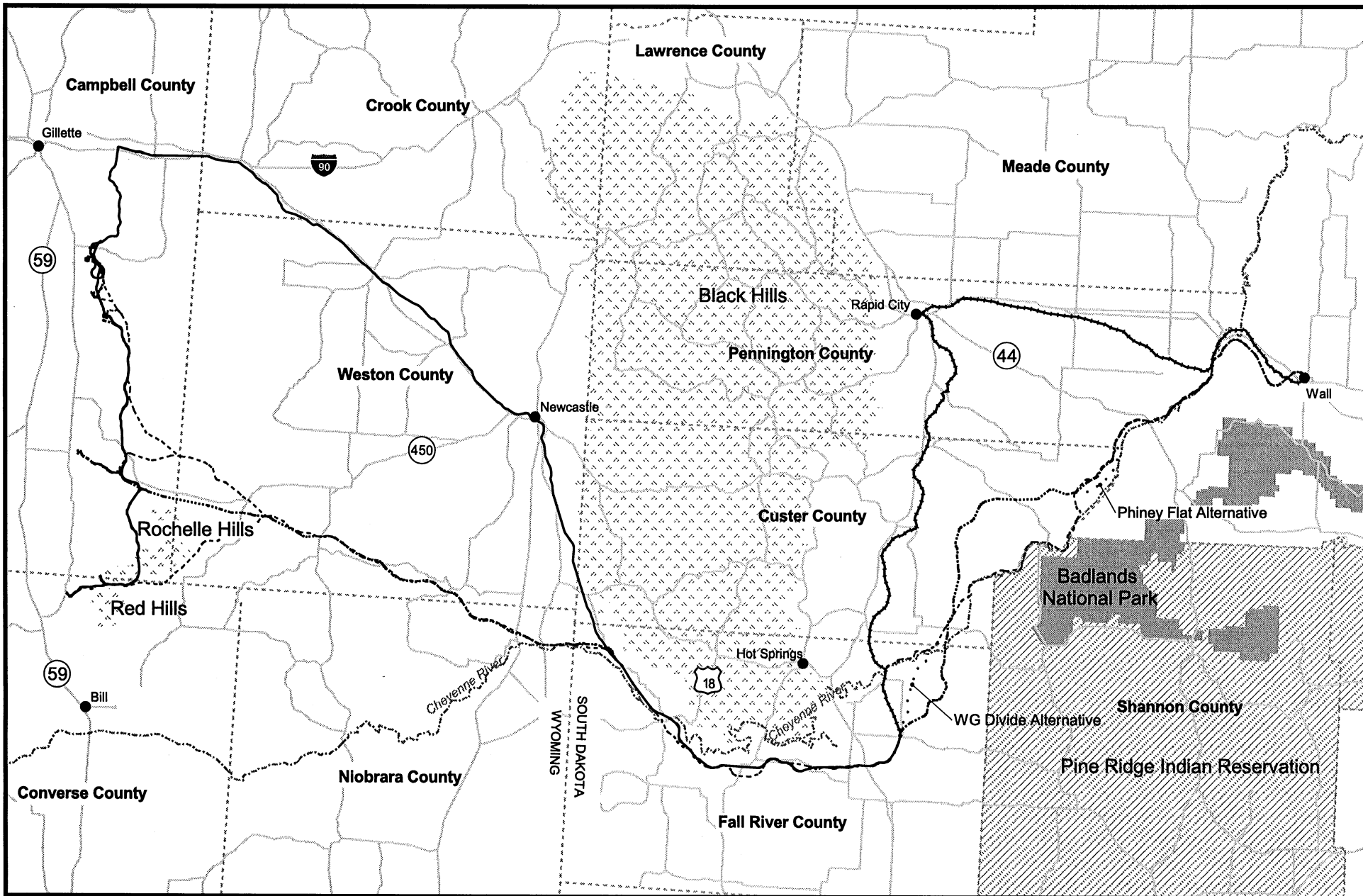


Figure 1-8
POWDER RIVER BASIN EXPANSION PROJECT
Alternatives B, C, and D,
Including Phiney Flat Alternative and WG Divide Alternative

1.4.7 Staging Yards under Alternative B

1.4.7.1 Middle West Staging and Marshaling Yard (Wall/Philip/Midland, South Dakota)

The location of this yard would be between MP 590.4 and MP 592.5. The dimensions of the yard would be 300 feet wide by 2.1 miles long. This yard is planned to serve as a staging yard for loaded and empty coal trains moving to and from mines in Wyoming. It would contain two marshaling tracks for use by manifest, grain, and way freight trains in serving local area customers. This yard would also serve as a crew change. It is likely that 40 to 50 jobs would be based here (DM&E 1999).

1.4.7.2 Middle Staging and Marshaling Yards and Shops (Huron-Wolsey, South Dakota)

This yard is planned to serve as the center of DM&E operations and maintenance. It would be designed to serve as the principal inspection and maintenance facility for all coal train equipment. Empty westbound coal trains would be inspected and switched here, receive freshly serviced and fueled locomotives and also receive the 1000-Mile Train Inspection and Certificate. Loaded eastbound coal trains would also be fully fueled and serviced here. Empty and loaded coal trains that could not be advanced would be held on staging tracks. This yard would have sufficient capacity to receive, classify, dispatch and store freight cars (DM&E 1999).

There would be a rail welding plant vehicle repair and maintenance shop and signal and communications repair shops. The yard would have an operations center and a central crew facility. All trains change crews at this yard. This yard would also serve as an interchange facility with the BNSF Railroad. It is likely that about 600 jobs would be located here at full operations. However, this number does not include contractor or support related jobs (DM&E 1999).

1.4.7.3 BNSF Interchange Yard (Dudley, South Dakota)

This yard would be located between MP 720.0 and MP 723.0 on the north side of the rail line. The dimensions of the yard would be 150 feet by 3.0 miles. This yard would be designed to be an interchange facility with the BNSF Railroad at Edgemont (Dudley), South Dakota. It would consist of a small group of tracks where the two railroads could deliver and pickup cars to and from the other. No employees are expected to be based at this yard (DM&E 1999).

1.4.7.4 West Staging Yard (Newcastle/Edgemont/Moorcroft, Wyoming)

The West Staging Yard would be located northwest of Edgemont in Weston County, Wyoming between MP 760.0 and MP 764.0 on the north side of DM&E's rail line. The dimensions of the yard are 1,300 feet by 3.1 miles. The yard would serve as a base of operations for trains serving the 11 coal mines in the immediate area. It would serve as a staging yard for empty trains and unit-train-only interchange between BNSF and DM&E. The yard would also have a small maintenance facility to provide emergency repairs to locomotives and cars and to provide locomotive refueling if required. The operating plan calls for fully fueled trains to leave the Middle Yard, load at the mines, and return to the Middle Yard without refueling. However, refueling capability would be provided at the West Staging Yard in case of disruptions due to severe weather, operating problems, or locomotives being reassigned enroute due to emergency situations. Also, maintenance work trains would need to be refueled at this yard. This yard would also have a small facility for maintenance-of-way equipment that would be used to maintain the tracks on the western end of the railroad.

This yard would have a major crew lodging and eating facility on the premises. It is likely that about 300 jobs would be based here at full operations. However, this would not include contract or support related jobs (DM&E 1999).

1.4.8 Staging Yards under Alternative C

1.4.8.1 Middle West Staging and Marshaling Yard (Wall/Philip/Midland, South Dakota)

The location of this yard would be the same as for Alternative B.

1.4.8.2 Middle Staging and Marshaling Yards and Shops (Huron-Wolsey, South Dakota)

The location of this yard would be the same as for Alternative B.

1.4.8.3 BNSF Interchange Yard (Dudley, South Dakota)

Under this alternative the yard would be located at MP 761.75. The dimensions of the yard would be 150 feet by 1.5 miles.

1.4.8.4 West Staging Yard (Newcastle/Edgemont/Moorcroft, Wyoming)-OPTION A

Under Option A the location of this yard would be between MP 787.0 and MP 793.0. The yard would be located on the Campbell Weston County line. The yard would be 1,300 feet by 6 miles and would impact 71 acres of National Forest Service (NFS) land, 78 acres of state land, and 101 acres of private land.

1.4.8.5 West Staging Yard (Newcastle/Edgemont/Moorcroft, Wyoming)-OPTION B

Option B is a 250 acre alternative for this yard. This alternative would avoid impacts to NFS lands, and is composed of private and state properties. The yard is located between MP 787.0 and MP 793.0.

1.4.9 Staging Yards under Alternative D

1.4.9.1 Middle West Staging and Marshaling Yard

The yard would be located in Custer County, South Dakota between MP 65.8 and 68.9. This segment of Alternative D would parallel the existing Chicago and Northwestern rail line. The yard would begin north of Fairburn and end just south of the city. The yard would be 300 feet by 3.1 miles.

1.4.9.2 Middle Staging and Marshaling Yards and Shops (Huron-Wolsey, South Dakota)

The location of this yard would be the same as discussed for Alternative B.

1.4.9.3 BNSF Interchange Yard (Dudley, South Dakota)

The location of this yard would be the same as discussed for Alternative B.

1.4.9.4 West Staging Yard (Newcastle/Edgemont/Moorcroft, Wyoming)

The West Staging Yard is located in Crook County, and is southeast of Moorcroft. All facilities and yard operations would be located between MP 563.0 and 568.0. The proposed yard would be 1,300 feet by 5 miles.

1.5 Rebuild Construction Activities

Because of years of deferred maintenance, much of DM&E's existing system is in poor condition. All of DM&E's existing system operates as either excepted track ¹, or under speed restrictions (some as slow as 5 mph with 40 mph being the maximum allowed on the system), and generally limited to 263,000 pound cars (286,000 pound cars are considered the industry standard). Existing rail is generally 90-100 pound, much of which is still jointed rail and as much as 100 years old. The existing system has limited sidings and other facilities such as maintenance yards, crew-change sites, and switching yards. Main line transit time averages approximately 150 hours (over 6 days), with rail car cycle times being approximately 12

¹ Federal Railroad Administration term, defined at 49 CFR, § 213.4. By definition operation of trains in excess of 10 miles per hour, revenue passenger operations, and trains with more than five cars requiring hazardous materials (as defined in 49 CFR part 172) placards are prohibited on excepted track.

days. Rebuilding of the existing system is necessary to facilitate safe and efficient transport of existing train traffic as well as unit coal trains.

The rebuild of the existing DM&E mainline from Winona, Minnesota westward to Wall, South Dakota would occur in such a way as to enable the line to be kept largely operational during the construction period. Sections of the rail line would be taken out of service for 12 to 24 hours, as is standard industry practice for rail line construction and maintenance. Rebuilding of the existing line would occur at several locations simultaneously. Some portions of the line would be closed to train traffic for a short period but closures could be scheduled around lower train traffic times, such as before crops are harvested.

The majority of the existing railbed is suitable for rebuilding the existing line to standards acceptable for 315,000-pound rail cars. While all the mainline would have the rail, ties, and ballast replaced, it is currently estimated that approximately 20 percent (approximately 120 miles) of the existing railbed subgrade² may require earthwork to improve its condition and suitability for the proposed project. In areas where subgrade or subballast work would be required, the line would be taken out of service, the ballast, ties and rail removed and suitable equipment brought in to repair the damaged or deteriorated sections of sub-grade and/or sub-ballast. Following rehabilitation of the railbed, new ballast, ties and rail would be installed.

For the majority of the main line, no rehabilitation of the sub-ballast or sub-grade would be necessary. Rebuilding of the existing line would be accomplished largely by rail-mounted equipment or equipment operating within the existing rail right-of-way. Sections of rail and ties would be removed by rubber-tired or rail-mounted equipment (such as boom trucks or cranes) and loaded onto rail flat cars. Ballast would be removed by front-end loaders and hauled off in dump trucks or rail cars or incorporated into the existing subgrade. Because of the deteriorated condition of DM&E's system, it is unlikely much of the rail, ties or ballast could be recycled or reused. Rail and ties of acceptable quality may be stockpiled for use along other sections of DM&E's system or in the construction of sidings. However, most of the material removed would be sold for scrap or disposed of consistent with environmental regulations.

Installation of new ballast, rail and ties would be done as described for the new construction. All new materials would be used; including 136 pound continuously welded rail, wood or concrete ties, and special fasteners in curves.

Numerous sidings, 35-45, would be constructed along the existing line to accommodate the additional rail mounted equipment necessary for construction and provide for continued rail service along the line. Sidings would be located within existing rail right-of-way, thus their locations would be limited to those areas where a sufficient right-of-way width, approximately 150 to 200 total feet, is available. Sidings would be constructed in similar fashion to other track construction, with earthmoving equipment expanding the existing rail bed to accommodate a siding and mainline track laid as previously discussed.

Additional sidings would be constructed during the rebuild process that would be necessary for operation of the system following completion of construction. Initially, the number of sidings and their locations would be established based on DM&E hauling its existing train traffic and the addition of 40 million tons of coal annually. As coal transport increases to the total of 100 million tons annually projected by DM&E, additional sidings would be added to accommodate traffic increases. Under the annual transport of 100 million tons of coal scenario, sidings would be approximately 3 to 7 miles long and spaced approximately 12 miles apart over the entire mainline, including the new rail line in South Dakota

² The subgrade is the earthen or fill portion of the railbed upon which the subballast material is placed. Ballast is placed over the subballast.

and Wyoming. Additionally, DM&E would upgrade many of its existing sidings and facilities serving its existing customers. Sidings would be designed to allow entry of trains from the main line at 40 mph.

Installation of grade crossings and crossing protection would be the same as for the new construction. Completion of the rebuild of the existing rail line is anticipated to take two construction seasons, generally the period between April 1 and November 1.

Following completion of project construction and existing line rebuild, the mainline DM&E system would consist of all new 136 pound, continuously welded rail. The system would be designed to accommodate 315,000-pound cars, although initially the largest cars would be the 286,000 pound variety.

1.6 New Construction Activities

Approximately 280 miles of new rail line would be constructed along new right-of-way. New rail line would be designed for 315,000 pound rail cars, operating in a maximum of 135-cars, either 3-6,000 horsepower locomotive or 4-4,400 horsepower locomotive trains, approximately 7,400 feet (1.4 miles) in length. Locomotives would be distributed throughout the train, with two in series at the lead and the third located either at the end of the train or located approximately two-thirds of the way back from the front of the train. Maximum operating speed on the new rail line would be 49 miles per hour (mph) for empty coal trains and other commodity trains and 45 mph for loaded coal trains. The new rail line would consist of 136 pound, continuously welded rail. Ties would be wood spaced at 19.5 inches or concrete spaced at 24 inches. Maximum grade for the line would ideally be 1.0 percent along tangent sections and 1.0 percent compensated on curves.

If the proposal is approved, right-of-way would be acquired and fenced. The right-of-way width for new rail line would be a minimum of 200 feet, centered on the rail line in most areas. In areas requiring significant cut or fill, additional right-of-way may be required to maintain railbed sideslopes. The construction area for the right-of-way would be restricted to the permanent right-of-way plus an additional 20 feet on either side of the permanent right-of-way's outer boundaries for fence construction, drainage, firebreaks, and access.

Rail line construction would likely occur at several locations simultaneously, starting with bridge and crossing construction. Five to seven bridge construction crews, consisting of approximately 50 workers each, could be working simultaneously, constructing bridges, culverts, cattle guards, and road, livestock and wildlife crossings. Cranes, dozers, and front-end loaders would be the equipment typically used. Much of the construction would involve placement of precast, concrete structures. The site would be prepared and the precast structures installed or cast structures formed and poured. Bridge and crossing construction would likely occur year-round. DM&E has indicated a precast concrete plant and staging yard would be established in Edgemont, South Dakota. Equipment and materials would be delivered by rail to this facility and construction crews would work east and west from Edgemont.

Construction and preparation of the rail bed would occur following bridge and crossing construction. As with bridges and crossings, five to seven crews of approximately 50 workers each would work on the railbed at different locations simultaneously, working east and west from Edgemont. Because of the variable nature of area topography, gently rolling to steeply sloped, and the need to maintain a slight grade slope (ideally 1.0 percent or less), significant cut and fill would be necessary along some sections of the line. Cut and fill would be accomplished using heavy earthmoving equipment such as scrapers, dozers, power shovels, draglines, front-end loaders, and belly-dump trucks. Blasting in some areas may be necessary as part of cut activities. Cut material would be used for fill in other locations. Efforts would be made to have fill requirements equal cut material. However, haul distances between cut and fill areas or additional fill requirements may require borrow areas be found outside the rail right-of-way for access to

fill material in closer proximity to fill areas. Additionally, extra right-of-way may be required to deposit cut material if it is not usable for fill in other areas due to its composition.

New rail bed construction would be accomplished using earthmoving and grading equipment, including bulldozers, scrapers, and dump trucks. Existing vegetation would be cleared and disposed of according to landowner requests and appropriate federal, state, and local requirements. The right-of-way would be grubbed and topsoil removed and stockpiled for later revegetation. Gravel and other materials required for the railbed would be acquired from local sources to minimize haul distances. Sub-grade material would be acquired within the permanent right-of-way or trucked from source areas. Sub-grade material would be installed and compacted to provide a stable, raised bed of 28 feet in width, comprised of gravels and soils upon which ballast, ties and rail would be laid.

During earthmoving activities, water trucks would be used to water the right-of-way and haul roads to help control dust. Water would also be applied to fill material to aid in compaction. Water would be moved along the right-of-way using irrigation piping and stored in pits along the right-of-way throughout the construction area. Water is anticipated to be obtained primarily from private stock ponds and wells, with the owners being compensated for the water used. Some water may be withdrawn from the Cheyenne River, if it is available and appropriate use agreements are obtained.

Disturbed areas would be revegetated after grading and earthmoving activities are completed. Areas disturbed during construction adjacent to the railbed would be graded as necessary and stockpiled topsoil spread over the area. Disturbed areas would be reseeded and mulched to help maintain soil stability and protect the seed until it can germinate and vegetation becomes established. Water trucks could be used if necessary to water revegetated areas until sufficient ground cover is established.

Following preparation of the sub-grade, sub-ballast material would be placed on the sub-grade and compacted to a depth of 6 to 12 inches. Ties and continuous welded rail would be laid on the sub-grade and welded in place. Signal and communication facilities would be installed. Ballast would be brought in by bottom drop rail cars. The rail and tie sections would be lifted by rail mounted tamping equipment and ballast dumped on the sub-grade and around the ties. Ballast would be compacted into place using tamping equipment to a minimum depth of 12 inches along tangent sections and in curves less than 2 degrees. Additional ballast would be used in curves of greater than 2 degrees. Following ballast compaction, the line section would be inspected and any flaws corrected. All new materials, including sub-ballast, ballast, ties and rail would be used.

It is likely that roads and bridges in the project area would be inadequate to handle the type of traffic and equipment required for construction of this project. DM&E would coordinate with the agency responsible for maintenance of each specific road (anticipated to be the State Departments of Transportation, county Highway Departments, United States Forest Service (FS), and Bureau of Land Management (BLM)) to develop and implement bridge and roadway requirements suitable for continued and safe use of roads accessing the construction areas.

Completion of construction is anticipated to take three construction seasons (April 1 through November 1). Bridge and crossing construction would occur year-round. However, earthwork could not be done when the ground is frozen, generally limiting railbed construction to April 1 through November 1.

Construction crews would work double shifts, between 7 am and midnight, six days a week. Equipment maintenance crews would work from midnight to 7 am.

1.7 Project Operations

Up to 100 million tons of coal (approximately 750,000 cars) and approximately 66,000 freight cars transporting primarily corn, wheat, soybeans, bentonite and kaolin clay, cement, and wood products would be transported over the system annually. Through coal trains would be an average of 115-135 cars in length, using either 4-4,400 horsepower or 3-6,000 horsepower locomotives, distributed within the train. Maximum train speeds would be 49 miles per hour. Four track maintenance periods up to six hours each, could be incorporated into the system operation every day.

Eastbound traffic would primarily consist of loaded trains, both coal and mixed freight, traveling at approximately 45 miles per hour. Westbound traffic would consist of primarily empty trains traveling at approximately 49 miles per hour. Westbound, empty trains would slow and switch onto passing sidings to allow loaded, eastbound trains to pass without need to stop or slow. Empty, westbound trains would generally not stop but would only slow to 40 miles per hour on sidings. However, occasionally they may be required to stop for a short period. After the loaded train had cleared, the empty train would switch back onto the mainline and accelerate up to normal operating speed.

Trains would be loaded at the various mines and dispatched to a western staging yard. From this yard, trains would be dispatched eastward. The train would continue, non-stop, to the next staging yard. Staging yards would be spaced based on transit times of approximately 7 hours, between 225 and 275 miles apart.

1.8 Maintenance Activities

DM&E would construct a new locomotive and rail car maintenance and repair facility as part of this project to accommodate the additional rolling stock and associated maintenance needs. This would be a state-of-the-art facility for scheduled maintenance, overhaul, inspection, testing, fueling, and major repairs, capable of maintaining 300 or more locomotives. In addition, staging yards would contain maintenance capabilities to handle common maintenance problems. Trains would be stopped at staging yards for equipment inspection and crew changes. Following inspection of rail cars and locomotives, any identified maintenance problems could be addressed at the staging yard or more substantial problems identified and referred to the main maintenance facility. Trains would be inspected at each staging yard and cleared before being dispatched onto the line. Rail cars and locomotives would receive scheduled maintenance and overhaul based on industry standards and recommendations.

DM&E personnel would perform general maintenance-of-way activities. Nine maintenance-of-way section headquarters for crews and equipment would be established at intervals throughout the system. In addition, contractors would be used for rail flaw testing, rail grinding, tie change-out, vegetation control, and other specialized tasks. Four, 6-12 hour windows would be available each day to perform maintenance activities on the line.

Vegetation control activities would also be part of regular maintenance along the rail line. Vegetation control measures would be designed to control noxious weeds and reduce the potential for rail-related fires. Herbicides approved by the Environmental Protection Agency (EPA) would be applied to the railgrade, including the area of ballast, rail and ties by licensed personnel. In addition, DM&E would perform vegetation control activities as part of its fire prevention and suppression plan that would include one or more of the following:

- plowing or sterilizing a fire guard at least 10 feet wide on both sides of the right-of-way, 50 feet from the centerline of the main track where practical and necessary,
- burning the right-of-way on both sides of the track 50 feet from the centerline of the main track

where practical and necessary,

- sterilizing the right-of-way for 12 feet on both sides of the centerline,
- applying a herbicide for 50 feet on both sides of the centerline where practical and necessary.

1.9 Potential Species Impacts

Construction of the PRB Expansion Project would involve potential impacts to certain federally listed endangered and threatened species. Requirements for the project include authorization by the Surface Transportation Board (STB), easements under the Federal Land Management Policy Act from the USFS, rights-of-way from the BLM and a permit from the U.S. Army Corps of Engineers (COE) pursuant to Section 404 of the Clean Water Act. All of these are federal actions that require compliance with the Endangered Species Act (ESA). This biological assessment summarizes the results of surveys for endangered and threatened species, and their habitats, along several proposed alternatives and provides information pertaining to the potential benefits of the project upon these species. It is submitted to the U.S. Fish and Wildlife Service (USFWS) in accordance with Section 7 of the ESA. In response, USFWS is requested to provide a Biological Opinion on the anticipated project effects and measures necessary to protect or conserve potentially impacted endangered or threatened species as they pertain to the environmentally preferred alternative.

Sixteen species of plants and animals known to occur, or potentially occurring, within the proposed project area are protected as ENDANGERED or THREATENED SPECIES or are under review for such statuses under the ESA (Table 1-1). The ESA affords protection to those species to be determined either endangered or threatened and their habitats. As defined by the ESA, an endangered species is “any species which is in danger of extinction throughout all or a significant portion of its range.” A threatened species is “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Under the ESA, it is illegal to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect listed endangered or threatened species. Violations of the ESA can result in substantial civil/criminal penalties, including fines and/or imprisonment.

A proposed species is one “for which a proposal to list the species has appeared in the Federal Register, and a final rule is pending.” Species that have been evaluated and determined eligible for listing as endangered or threatened, but whose listing is currently precluded because of a need to take action on higher priority species, are listed as candidate species.

Table 1-1
ENDANGERED, THREATENED, CANDIDATE OR PROPOSED SPECIES

Common Name	Scientific Name	Federal Status
Black-footed Ferret	<i>Mustela nigripes</i>	Endangered
Peregrine Falcon	<i>Falco peregrinus</i>	Delisted ¹
Piping Plover	<i>Charadrius melodus circumcinctus</i>	Endangered
Whooping Crane	<i>Grus americana</i>	Endangered
Interior Least Tern	<i>Sterna antillarum</i>	Endangered
Topeka Shiner	<i>Notropis topeka</i>	Endangered
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	Endangered
American Burying Beetle	<i>Nicrophorus americanus</i>	Endangered
Minnesota Dwarf Trout Lily	<i>Erythronium propullans</i>	Endangered
Higgin's Eye Pearly Mussel	<i>Lampsilis higginsii</i>	Endangered
Winged Mapleleaf Mussel	<i>Quadrula fragosa</i>	Endangered
Karner Blue Butterfly	<i>Lycaeides melissa samuelis</i>	Endangered
Ute Ladies'-tresses Orchid	<i>Spiranthes diluvialis</i>	Threatened
Prairie Bush-Clover	<i>Lespedeza leptostachya</i>	Threatened
Leedy's Roseroot	<i>Sedum integrifolium</i> ssp. <i>leedyi</i>	Threatened
Western Prairie Fringed Orchid	<i>Platanthera praeclara</i>	Threatened
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened ²
Mountain Plover	<i>Charadrius montanus</i>	Proposed
Swift Fox	<i>Vulpes velox</i>	Candidate
Sturgeon Chub	<i>Macrhybopsis gelida</i>	Candidate
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	Candidate

¹-Peregrine falcons were originally included in the Biological Assessment; however, on August 25, 1999 the USFWS determined that the American peregrine falcon is no longer an endangered or threatened species pursuant to the Endangered Species Act of 1973. Therefore, the peregrine falcon is not discussed further in this document.

²-USFWS has proposed to remove the bald eagle from the endangered species list but potential impacts to bald eagles are included and analyzed in the BA.